

CHECKLIST OF THE BIRDS OF THE DELHI REGION: AN UPDATE¹

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(With a text-figure)

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A complete list of birds recorded from the Delhi region during two separate periods, 1977-79 and 1984-86, is compared with previous checklists. The comparison reveals changes in status and populations of various species, notably sharp declines for many resident raptors (such as Crested Honey Buzzard, White-eyed Buzzard, Tawny Eagle, Pallas's Fishing Eagle, King Vulture, Laggar Falcon, Red-headed Merlin and Dusky Eagle-Owl), several riverside species (Blacknecked Stork, Greater Adjutant, Great Stone Plover, Little Tern and Indian Skimmer) and some passerines (Marshall's Iora, White-browed Fantail Flycatcher, Paradise Flycatcher, Chestnut-bellied Nuthatch, White-bellied Minivet, Spotted Grey Creeper and wintering Wheatears). Six additions to the Delhi checklist are recorded, including three breeders (Spotted Crane, Caspian Plover, Drongo-Cuckoo, Yellowbellied Wren-Warbler (breeder), Striated Marsh Warbler (breeder), Whitetailed Bush Chat (breeder).

INTRODUCTION

A checklist of the birds of the Delhi region was first attempted by Basil-Edwards (1926) and later, Frome (1947, 1948) prepared a second checklist covering the period 1931-45. Subsequent additions to the list were made by Benthall (1949) and Alexander (1949). More recent checklists are based on Hutson's observations in 1943-45, which, supplemented by Alexander's records, were published in book form, Hutson (1954); and on relatively intensive field work in this area over the years 1958-70 by several ornithologists (Malcolm MacDonald, Julian P. Donahue, Victor C. Martin, Peter Jackson, Usha Ganguli, etc. - collated in Usha Ganguli's Guide to the Birds of the Delhi Area, 1975). Abdulali and Panday's (1978) Checklist of the Birds of Delhi, Agra and Bharatpur is the latest and most comprehensive of these checklists available.

Since all these comment to one extent or the other on the status, populations and habitat preferences of the various species, they are of interest in their illustration of how Delhi's bird life has evolved along with the city itself. Indeed, it appears

that with the creation of new habitats, and the protection accorded to certain patches of habitat (river, scrub, garden or forest) within the city's limits, both avian diversity and numbers of many species actually increased upto the 1960s. Thereafter, judging from personal observations in the late 1970s and mid 1980s, increasing urbanisation in South Delhi and east across the Jamuna river has destroyed, or blocked access, to some of the best bird habitats and resulted in the decline of some species; at the same time, there has also been new colonisation by a few species, such as two marsh haunting warblers (Yellow-bellied Wren-Warbler, Striated Marsh Warbler) and a thrush (White-tailed Bush-Chat).

METHODOLOGY

Records of bird observations were maintained during two separate periods of residence in Delhi, from end 1977 to September 1979 and from end-1984 to July 1986. Compared, in particular, with the status notes recorded by Usha Ganguli, these observations provide some indication of how Delhi's birds have fared since the early 1970s.

The area covered was not, however, as extensive as that covered by the earlier studies; it includes essentially the following habitats: (i) the Jamuna river, with its associated cultivated and

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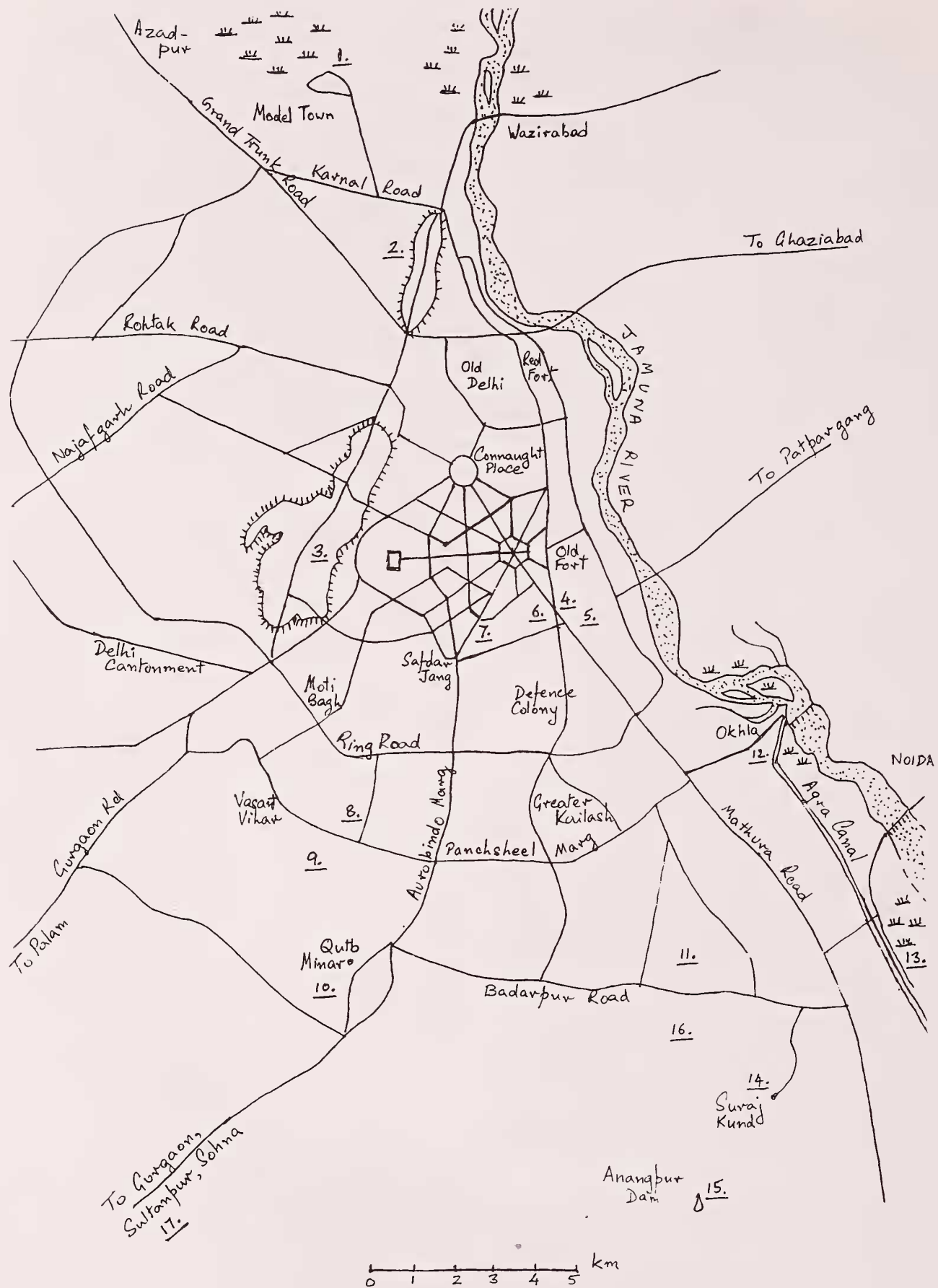


Fig. 1. Sketch map of the immediate neighbourhood of Delhi. Birdwatching Sites indicated on the map.

1. Marshes near the Coronation Memorial Pillar and Model Town, North Delhi;
2. Old Delhi (Northern) Ridge;
3. New Delhi (Southern) Ridge;
4. Delhi Zoo;
5. Sunder Nursery, Humayun's Tomb area;
6. New Delhi Golf Links;
7. Lodi Gardens;
8. Hauz Khas 'city forest';
9. Jawaharlal Nehru University Campus;
10. Qutb Minar and associated ruins, Mehrauli;
11. Tughlakabad;
12. Okhla;
13. Madanpur marshes, between Agra Canal and the river;
14. Surajkund;
15. Anangpur Dam;
16. Scrub country near Tughlakabad;
17. Road to Gurgaon, Sultanpur, Sohna, Nuh.

marshy areas, from Wazirabad in North Delhi to about 6 km south of Okhla; (ii) New Delhi, including parks and the artificial city forests of South Delhi; (iii) the marshes near the Coronation Pillar and Model Town in North Delhi; (iv) the New Delhi Ridge, and the associated thorn-scrub country extending southwards past the Jawaharlal Nehru University campus to the Qutub Minar/Mehrauli area and east to Tughlakabad and Surajkund; (v) scrubby rocky areas near Sohna, south of Delhi, and (vi) the Sultanpur Lakes and countryside near Gurgaon, southwest of Delhi. West Delhi and the Najafgarh area, and the now rapidly colonising countryside across the Jamuna river were neglected completely. The sketch map of Delhi's immediate neighbourhood (Fig. 1) indicates most of these sites.

Observations were taken during field trips as and when time permitted, and did not follow any pattern or periodicity. No collecting or netting was done.

BIRD LIST

In the list of species recorded by me, I have included comments where my observations differ from Ganguli (1975) and Abdulali and Panday's (1978) Checklists.

The following symbols are used in attempting to define the status of each species;

R: Resident (seen all year).

RB: Resident, breeding confirmed.

W: Winter visitor.

IW: Irregular winter visitor (not annual).

M: Migrant, in seasons other than winter.

PM: Passage migrant (both passages, unless specified).

V: Vagrant.

The following symbols attempt to define the population of the species, in the appropriate season of occurrence:

a: Abundant, in large numbers in the right habitat.

c: Common, will usually be found in the right habitat.

fc: Fairly common, or regularly (but not always) seen in the right habitat.

o: Occasional, not expected to occur, even in the right habitat.

s: Scarce, less than a couple of records each season.

r: Rare.

001. Little Grebe, **Tachybaptus ruficollis** - R, c.

002. Great Crested Grebe, **Podiceps cristatus** - W, o. A few records in winter, all of single birds, on the Jamuna river and Sultanpur lakes.

003. Rosy Pelican, **Pelecanus onocrotalus** - W, c. Sultanpur Lake; numbers vary from year to year; maximum of 400 in winter 77-78, over 1000 in winter 78-79, very few (less than 20) in winter 85-86. A few present with Dalmatian Pelicans at Okhla in March 1979.

004. Dalmatian Pelican, **Pelecanus crispus** - W, fc. Few each winter at Sultanpur, maximum of about 15 (not in one flock) in March 1986. Dalmatians, with a maximum of 17 on 7 March 1979, are often present just downstream of the Okhla weir on the Jamuna in March, when the gates of the weir are opened, presumably resulting in an abundance of fish below the gates.

005. Large Cormorant, **Phalacrocorax carbo** - RB, fc.

006. Indian Shag, **Phalacrocorax fuscicollis** - RB, fc.

007. Little Cormorant, **Phalacrocorax niger** - RB, c.

008. Indian Darter, **Anhinga rufa** - R, fc.

All the above four species are doing well. Large Cormorants and Shags appear to have increased since Usha Ganguli's time, with 100-400 present at Sultanpur in winter. Flights to roosts of Large Cormorants north along the river at Okhla in summer may total several hundred. Shags breed with Little Cormorants at Delhi zoo; Large Cormorants on acacia covered islands in Sultanpur Lake.

009. Grey Heron, **Ardea cinerea** - RB, fc. Small numbers, breeding locally.

010. Purple Heron, **Ardea purpurea** - RB, c. Very common at Okhla, May-September. Breeding in reedbeds at Madanpur village, south of Okhla;

about 40 nests on 6 July 1986. Nests contained well grown young; a few fledged juveniles hunting on short grass but flying back to nest on parent's return. More birds probably breed on reedy islands at Okhla. The increase in the populations of this species noted by Usha Ganguli appears to have been maintained.

011. Little Green Heron, **Butorides striatus** - R, s. Only noted at Surajkund, where present all year. Some wandering after breeding, indicated by one juvenile seen in Delhi zoo, August 1984.

012. Indian Pond Heron, **Ardeola grayii** - RB, c.

013. Cattle Egret, **Bubulcus ibis** - RB, a.

014. Large Egret, **Egretta alba** - RB, c.

015. Smaller Egret, **Egretta intermedia** - RB, c.

016. Little Egret, **Egretta garzetta** - RB, c.

017. Night Heron, **Nycticorax nycticorax** - RB, c.

All the above six species evidently doing well, breeding locally.

018. Chestnut Bittern, **Ixobrychus cinnamomeus** - M(or R?), o.

019. Yellow Bittern, **Ixobrychus sinensis** - M(or R?), s.

Both bitterns were recorded from early June onwards through the monsoon at Madanpur and Okhla, the former also at marshes in North Delhi. Pairs of both species seen flying back and forth high over reedbeds at Okhla with slow flapping flight. The Chestnut Bittern appears the commoner of the two.

020. Painted Stork, **Mycteria leucocephala** - RB, c. Has maintained its abundance. Breeding freely in Delhi zoo. Often large gatherings during the monsoon by the river, maximum of 250 in July 1985.

021. Openbill Stork, **Anastomus oscitans** - M, o. Remains unusual, though rather more frequent than what the few records in the 1960s and 1970s appear to indicate. A few present every year March to August about Okhla and elsewhere, with a maximum of 32 on 7 March 1979 at Okhla.

022. Whitenecked Stork, **Ciconia episcopus** - RB, fc. Fairly common, frequent records of pairs or small parties, in cultivation by the river, marshy

areas near Model Town in North Delhi and open country about Gurgaon and Sultanpur. No noticeable change in status or population.

023. Blacknecked Stork, **Ephipporhynchus asiaticus** - R, s. Appears to have declined since the 1970s, when it was considered fairly common by Usha Ganguli. One pair usually present at Sultanpur Lake, and a single bird on a Jamuna sandbank in March 1979 are the only records. No evidence of breeding.

024. Adjutant Stork, **Leptoptilos dubius** - M, s. Up to 4-5 birds present in July-August by the river about Okhla nearly every year. No evidence of the large congregations recorded by Usha Ganguli in the 1960s.

025. White Ibis, **Threskiornis melanocephala** - R, fc. Seen only at Sultanpur Lake, maximum of about 30 birds on a given day. Numbers may have declined.

026. Black Ibis, **Pseudibis papillosa** - RB, o. Scattered pairs or parties of up to 6, by the river and at Sultanpur. Breeding recorded in July 1986; pair building nest on an unusual site, on the crossed steel struts, at a height of about 30 m, of a giant power pylon standing in an open field at Madanpur, south of Okhla. Building material was carried by only one of the pair, the other following the former on each visit to the nest site. Observations could not be continued to determine whether breeding was successful.

027. Spoonbill, **Platalea leucordia** - R, fc. No evidence of breeding, but remains in good numbers throughout the year, both at Sultanpur and by the river; numbers increase December to March.

028. Greater Flamingo, **Phoenicopterus roseus** - R?, fc. Up to 200-500 birds present at Sultanpur usually, all year, but numbers vary irregularly; at times, up to 1500. In 1985 and 1986 birds were for the first time seen by the Jamuna river, up to 200 between March and June with smaller numbers till October.

029. Whitefronted Goose, **Anser albifrons** - V. 1 immature, associating with Spotbills (rather than with nearby parties of Greylag) was present at

Okhla on 21 January 1986.

030. Greylag Goose, **Anser anser** - W, c. Probably under 500 at Sultanpur each winter, except in December 1985, when over 1000. Very occasionally seen by the river.

031. Barheaded Goose, **Anser indicus** - W, c. May have increased in the Delhi area and is now commoner than the Greylag. Minimum of 1500-2000 at Sultanpur in winter 1985-86. Much more frequent by the river than the Greylag, with parties of 10-20 often present at Okhla in midwinter. Numbers increase (passage?) in March, with a maximum of 150 on 2 March 1986 on Okhla sandbanks.

032. Lesser Whistling Teal, **Dendrocygna javanica** - M(Breeding?), o. Not recorded 1978-79, but up to 25 were present during May 1985 and between 20 April - August 1986 about Okhla. On 6 July 1986, pairs and foursomes were seen flying about and settling in reedbeds at Madanpur - indication of nesting activity? On 5 August 1989, 6-7 pairs were noted flying out from small islets in the Okhla reservoir towards surrounding fields. In comparison with the few earlier records, this species appears to have increased and is possibly breeding in the area.

033. Ruddy Shelduck, **Tadorna ferruginea** - W, c. Maximum of 250 on the 8 km stretch of river from Old Delhi to south of Okhla.

034. Common Shelduck, **Tadorna tadorna** - IW, s. Maximum of 9 birds present on the Jamuna river through 1979. 5 seen at Sultanpur on 28 December 1985.

Most of the ducks appear to have maintained their numbers in spite of increasing urbanisation on the east bank of the river. The large numbers which were noted wintering on the river north of the old Okhla weir in 1978-79 appeared to have shifted their main resting area to just downstream, where the new Okhla barrage has resulted in the impoundment of a large body during the monsoon, which remains until midwinter when dessication sets in.

035. Pintail, **Anas acuta** - W, a. With Shoveller, the commonest duck in winter. On the river, maximum of 6000 on a 6 km stretch; at

Sultanpur, maximum of 5000 in December 1985.

036. Common Teal, **Anas crecca** - W, c.

037. Spotbill, **Anas poecilorhyncha** - RB, c. Populations may have increased since the 1960s-70s. Maximum numbers during end March-August. Over 2000 counted in two hours on feeding flights on a late May evening at Okhla. Breeding freely, ducklings noted May-August. Wild birds breeding at Delhi zoo.

038. Mallard, **Anas platyrhynchos** - W, o. Maximum of 30 at Sultanpur on 1 March 1986.

039. Gadwall, **Anas strepera** - W, c. In smaller numbers than the Pintail.

040. Falcated Teal, **Anas falcata** - V. At least one male with Gadwall at Okhla on 2 February 1979.

041. Wigeon, **Anas penelope** - W, c. Maximum in 100s on the river and Sultanpur.

042. Garganey, **Anas querquedula** - PM, c. Both passages, abundant in spring, 8 March-24 May.

043. Shoveller, **Anas clypeata** - W, a.

044. Redcrested Pochard, **Netta rufina** - W, fc. Maximum of under 250 in winter, usually only in 10s on the river and Sultanpur.

045. Common Pochard, **Aythya ferina** - W, c. Maximum of 2000 on the river.

046. White-eyed Pochard, **Aythya nyroca** - W, fc. Small numbers only, 10s rather than 100s.

047. Tufted Pochard, **Aythya fuligula** - W, c. At times outnumbering all other Pochards on the river, as in winter 1985-86.

048. Cotton Teal, **Nettapus coromandelianus** - M, o. Small numbers only, March to August. Maximum of about 30 in water lily covered borrowpit in August 1989. No evidence of breeding.

049. Nukta, **Sarkidiornis melanotos** - M, s. Mostly recorded in summer, late March to June. Maximum of 28 seen returning to daytime rest area on the river on a late May morning.

050. Blackwinged Kite, **Elanus caeruleus** - RB, fc. Thinly scattered in open areas, even within city limits (e.g. New Delhi Ridge). Flying young accompanying parents at the end of December 1985.

051. Crested Honey Buzzard, **Pernis**

ptilorhynchus - R? s. Has declined since the 1960s. A pair in December 1985 at Mehrauli, another pair which haunted the New Delhi Ridge in March-May 1986, and an immature which descended to an Okhla sandbank to drink on a hot early morning on 17 May 1986 are my only records in this entire period!

052. Pariah Kite, **Milvus migrans** - RB, a. The race *govinda* is an abundant breeding resident; the race *lineatus* is occasionally seen in winter.

053. Brahminy Kite, **Haliastur indus** - M, s. May have declined in the area. Singles at the Delhi zoo in August, and 2 immatures at Okhla in July 1985 are the only records.

054. Shikra, **Accipiter badius** - RB, c. Nest building in second-half of March, feeding newly hatched young in May, at Lodi Gardens, 1986.

055. Sparrow Hawk, **Accipiter nisus** - V (or IW?), r. A female in January 1979 seen within city limits is the only record.

056. Longlegged Buzzard, **Buteo rufinus** - W, fc. Well distributed in winter, even within and over the city. Most birds tend towards the pale phase, but one classic dark phase bird was recorded by the river at Madanpur on 19 January 1986. May have become actually more common since the 1960s.

057. White-eyed Buzzard, **Butastur teesa** - R? s. Appears to have declined and is now distinctly scarce. Occasional sightings near the river and Tughlakabad in 1978-79; a pair at Palam in September 1985 and one bird in Sunder Nursery within city limits in March 1986 are the only records.

058. Booted Hawk-Eagle, **Hieraetus pennatus** - W, o. Usually singly, once a pair seen in March 1986. Only about 1 in 5 appear to be of the pale phase; the dark phase and an occasional intermediate phase are more frequent. The intermediate phase has the typically patterned upper parts of this species, including the pure white shoulder-spot; the throat and breast are dark buff-brown, the belly paler; lesser underwing coverts medium buff-brown, middle and greater underwing coverts dark blackish-brown, this colour linked with the dark outer primaries and appearing as a dark band across the middle of the underwing; a pale wedge

on inner primaries; secondaries dark with noticeable barring.

059. Bonelli's Hawk-Eagle, **Hieraetus fasciatus** - V? r. One adult seen over Tughlakabad in December 1985.

060. Imperial Eagle, **Aquila heliaca** - W, o. At least one adult was recorded each year (when observations were made) in the riverain and cultivated areas just north and south of Okhla. In some winters, additional individuals were present some 6-8 km further downstream from Okhla. Sultanpur Lake holds at least one bird each winter; in the 1985-86 winter there were two, an adult and a juvenile. This species appears to actually be more regular now than in the 1960s.

061a. Tawny Eagle, **Aquila rapax vindhiana** - R, o. Not common, and appears to have declined since the 1960s. Not recorded over the city, unlike previously, and only occasionally in cultivation by the river. No breeding records.

061b. Steppe Eagle, **Aquila rapax nipalensis** - W, c. Widespread winter visitor to all areas, including over the city.

062. Greater Spotted Eagle, **Aquila clanga** - W, fc. A minimum of 2-3 birds at Sultanpur Lake each winter. When the reservoir at Okhla is full, Spotted Eagles are often present; 2 well-marked juveniles and one adult were recorded in March 1985. Also occasionally seen in other marshy areas in North Delhi. Hostility is shown towards it by both Steppe and Pallas's Fishing Eagle.

063. Lesser Spotted Eagle, **Aquila pomarina** - V? r. One bird, whose identification can only be as certain as this species permits, was recorded in North Delhi over the marshes beyond Model Town. Only record, January 1986. A smallish head like the Longlegged Buzzard's, noticeably broad rounded wings held forward and drooping from carpal joints when soaring (quite unlike the Steppe/Tawny silhouette) and shortish rounded tail, about two-thirds width of wings. Uniform dark brown body and upper- and under-wing coverts, with darker blackish flight feathers. No white markings at all, above or below. Size, compared with Kite, about 10% larger.

064. Pallas's Fishing Eagle, **Haliaeetus**

leucoryphus - W? r. Has clearly declined. One immature in winter 1978-79, another in December 1985-January 1986, both about the river at Okhla, are the only records. Birds which were recorded in the 1940s and 1950s as breeding by the river in North Delhi and Okhla have evidently abandoned these sites.

065. King Vulture, **Torgos calvus** - V(or R?), r. Very scarce; populations appear to have declined sharply since the 1960s. One pair seen in winter of 1977-78, another in December 1985, both over New Delhi are the only records.

066. Indian Griffon, **Gyps fulvus** - W, s. Single birds, very infrequent, recorded soaring or perched with other vultures in winter.

067. Longbilled Vulture, **Gyps indicus** - R? o. Never over the city, but not uncommon in low hilly and rocky areas as at Sohna, south of Delhi, in winter.

068. Whitebacked Vulture, **Gyps benghalensis** - RB, a.

069. Scavenger Vulture, **Neophron percnopterus** - RB, c.

070. Pale Harrier, **Circus macrourus** - W, s and PM, o. Very small numbers in mid-winter (4 singles in 4 years), more frequent in March when presumably on passage. Numbers may have declined.

071. Montagu's Harrier, **Circus pygargus** - W, r. One male in dry open scrub country near Mehrauli, March 1979, only record.

072. Marsh Harrier, **Circus aeruginosus** - W, c. Arrives early, on 5 August.

073. Short-toed Eagle, **Circaetus gallicus** - R? s. Now rare in immediate vicinity of the city, but still seen occasionally in the riverain tract, Surajkund and Sultanpur.

074. Crested Serpent Eagle, **Spilornis cheela** - PM, s, or V? 3 records of single birds in 4 years; end March and 7 April 1979 and end March 1986; in New Delhi gardens and the Ridge.

075. Osprey, **Pandion haliaeetus** - W, r. Sharply declined, now not usually present in Delhi's vicinity. Only recorded once, at Okhla, winter 1978-79.

076. Laggar Falcon, **Falco jugger** - R? r.

Markedly declined and now very scarce. Only 2 records, one bird chased by crows near the Red Fort in December 1984 and one circling over the city on 17 April 1985.

077. Peregrine, **Falco peregrinus** - W, o. A couple of birds every winter on the 8 km stretch of river centered at Okhla, perching on power pylons and hunting over the river and surrounding fields.

078. Redheaded Merlin, **Falco chiquera** - R? r. Declined markedly. Only one record, 8 March 1986, one flying low along the river bank about 3 km south of Okhla.

079. Kestrel, **Falco tinnunculus** - W, fc.

080. Black Partridge, **Francolinus francolinus** - RB, fc.

081. Grey Partridge, **Francolinus pondicerianus** - RB, c.

Both partridges have maintained their numbers where their preferred habitat remains, the Black in cultivation, marshes and scrub, the Grey everywhere in dry country, including rambling New Delhi gardens and the Ridge.

082. Rain Quail, **Coturnix coromandelica** - Breeding M (or R?), o. Frequent locally in wet grassy and marshy areas in both North and South Delhi. Calling at Sultanpur from as early as 4 March through the monsoon. Not noted in winter.

083. Peafowl, **Pavo cristatus** - RB, c. In a semi-feral state, including within city limits.

084. Bustard-Quail, **Turnix suscitator** - RB, o. A male recorded with 3 well grown young on New Delhi Ridge on 25 May 1986.

085. Common Crane, **Grus grus** - W and PM (spring), o. In winter at Sultanpur, dispersing to feed over the surrounding fields. Estimated minimum of 300 on 1 March 1986. Small parties of 3 or 4 noted occasionally elsewhere, as at Okhla. In end March, flocks of about 150 noted on 3 separate occasions flying northwards, high over the river at Okhla in 1979 and 1985.

086. Sarus Crane, **Grus antigone** - RB, o. Scattered, in small numbers, in surrounding countryside. No large gatherings noted. Parties of parents with flying young occur, so presumably resident in the area.

087. Demoiselle Crane, **Anthropoides virgo** - PM? s. 11 birds at Sultanpur Lake on 1 March 1986.

088. Spotted Crake, **Porzana porzana** - V (or W, r?). New record for Delhi. One bird, studied closely from 6 m distance through binoculars, feeding along the edge of a reedy pond at Sultanpur at 8 a.m. on 4 March 1979.

089. Baillon's Crake, **Porzana pusilla** - PM? o. Small numbers, usually under 10 on a given day, occasionally seen about hyacinth covered channels at Okhla, in March.

090. Ruddy Crake, **Porzana fusca** - R, s. Small numbers seen in winter 1985-86 feeding in waterlogged openings in reedbeds at Madanpur, about 6 km south of Okhla. This is the same place where they were first recorded for Delhi by J. Donahue in June-July 1962. Not only has this species maintained itself in Delhi, the birds are probably residents.

091. Brown Crake, **Amaurornis akool** - R, o. Noted both summer and winter in marshes in North Delhi, about Okhla and Madanpur, occasionally elsewhere, even on the edge of small ponds in dry scrub country such as the campus of Jawaharlal Nehru University. Singles and pairs. May have increased in both numbers and range since the 1960s.

092. Whitebreasted Waterhen, **Amaurornis phoenicurus** - RB, c.

093. Watercock, **Gallicrex cinerea** - M (breeding)? s. In July 1979, at least 4 males in breeding plumage were seen feeding in the open and 'singing' in the evening at marshes in North Delhi near the Coronation Pillar. Further investigation will probably prove it to be a regular breeder in these marshes (if the habitat does not deteriorate) as well as around Okhla and Madanpur.

094. Moorhen, **Gallinula chloropus** - RB, c. Downy chicks noted on 22 March 1986.

095. Purple Gallinule, **Porphyrio porphyrio** - RB, c.

096. Coot, **Fulica atra** - W, a, and R, s. Large numbers in winter. Very few birds are also seen through the summer, especially in North Delhi, but

no evidence of breeding.

097. Pheasant-tailed Jacana, **Hydrophasianus chirurgus** - M (breeding), fc, and R, s. Fairly common second half of March to September, presumably breeding. Very small numbers in winter.

098. Bronze-winged Jacana, **Metopidius indicus** - V? or R? s. There are very few earlier records of the species from Delhi. Not recorded 1978-79. In 1985-86, single birds or pairs were present in February and May at Okhla; a pair was again present in the same area on a later visit, 5 August 1989. Perhaps establishing itself as a resident.

Most of Delhi's waders have maintained their populations; some species, previously considered rare stragglers during spring migration have, in recent years, occurred with increasing regularity, such as the Curlew Sandpiper and the Lesser Sand Plover.

099. Whitetailed Lapwing, **Vanellus leucurus** - W, fc.

100. Green Lapwing, **Vanellus vanellus** - W, o. Small parties of usually under 20, once about 40, between December and March.

101. Spurwinged Lapwing, **Vanellus duvauceli** - RB, c. Common about Jamuna sandbanks. Judging from behaviour, several scattered pairs had either eggs or young in the same general area in Okhla in May 1986.

102. Red-wattled Lapwing, **Vanellus indicus** - RB, c.

103. Yellow-wattled Lapwing, **Vanellus malabaricus** - R, fc. Small numbers in dry country near Tughlakabad, Mehrauli and Surajkund.

104. Grey Plover, **Pluvialis squatarola** - V, on spring passage. 2 in partial breeding plumage on Okhla sandbank on 6 May 1979.

105. Little Ringed Plover, **Charadrius dubius** - RB, c. Breeding in May; by end-May, small parties form, of 10-15 adults and juveniles.

106. Kentish Plover, **Charadrius alexandrinus** - W, c. From March, several in breeding plumage, and increased numbers indicating passage. A pair in breeding plumage was present at Okhla in mid-June, but no evidence was noted of breeding.

107. Caspian Plover, **Charadrius asiaticus** - V, in spring. New record for Delhi. One bird, in breeding plumage was present on closely cropped grazing land near Sultanpur Lake on 1 March 1986, loosely associated with a pair of Indian Coursers. Studied through binoculars from about 28 m distance.

Size about two-thirds that of a Courser. Rather pale brown crown, back and wings, and a clearcut brown band from eye curving back and down to meet brown hindneck. Forehead, long broad eyebrow, lores, throat and cheeks pure white. Broad rufous-chestnut band across breast bordered below with a thin black line. Belly and vent white, conspicuous when bird dipped. In flight wings appeared long and narrow (like a Golden Plover in the distance); faint wingbar, underside of wings whitish. Tail short. Eye dark and conspicuous, bill dark, legs brownish.

108. Lesser Sand Plover, **Charadrius mongolus** - PM (spring), o. Throughout the second half of May, both in 1985 and 1986, a maximum of 20 birds were present daily on sandbanks at Okhla below the weir; in 1986, one was present as early as 9 May. Most were in full breeding plumage.

109. Curlew, **Numenius arquata** - W, o. Singly or in parties of up to 20, preferring marshes to the river.

110. Blacktailed Godwit, **Limosa limosa** - W, fc. Wintering numbers vary year to year. At Sultanpur, abundant 1978-79, few (under 100) 1985-86.

111. Dusky Redshank, **Tringa erythropus** - W, o, and PM in spring. Marked spring passage, e.g. about 150, most in breeding plumage, at Sultanpur on 5 May 1985.

112. Redshank, **Tringa totanus** - W, fc.

113. Greenshank, **Tringa nebularia** - W, c.

114. Marsh Sandpiper, **Tringa stagnatilis** - W, o and PM. Sometimes common on autumn passage, many still in breeding plumage, in late-July and August, and in spring in April.

115. Wood Sandpiper, **Tringa glareola** - W, c.

116. Green Sandpiper, **Tringa ochropus** - W, c.

117. Terek Sandpiper, **Xenus cinereus** - V, on spring passage. One, in breeding plumage, on Okhla sandbank with numerous other waders on 9 May 1979. Has been recorded once earlier at about the same date at the same place (Usha Ganguli) in 1968.

118. Common Sandpiper, **Actitis hypoleucos** - W, c.

119. Common Snipe, **Gallinago gallinago** - W, c. At times very numerous in North Delhi marshes, with numbers that must run into a few hundreds scattered over inundated grassy marshes, e.g. in December 1985.

120. Little Stint, **Calidris minutus** - W, fc, and PM, a, in spring. Numbers at Okhla in April-mid May can be spectacular, running into several hundreds if not thousands, with smaller groups present till early June.

121. Temminck's Stint, **Calidris temminckii** - W, c. Often commoner than Little Stint in mid-winter; numbers increase in spring.

122. Dunlin, **Calidris alpinus** - W, o. Small numbers regular at Sultanpur, irregular by the river. Occasionally seen in breeding plumage at Okhla in the first week of May.

123. Curlew Sandpiper, **Calidris testaceus** - PM (spring), o. Not infrequent on spring passage at Okhla, up to 30 birds present on sandbanks below the weir, between 5 May and 9 June, many in breeding plumage. One autumn record of about 10 at Okhla on 21 October 1985.

124. Ruff, **Philomachus pugnax** - W, fc. In 1986, 2 males were present at Okhla as late as 9 June; one in nearly complete breeding plumage with black ruff and ear-tufts, reddish around eye and a reddish-orange bill.

125. Painted Snipe, **Rostratula benghalensis** - RB, fc. More often noticed May to July, feeding in the open, chasing each other, flying about and calling.

126. Blackwinged Stilt, **Himantopus himantopus** - W, c. Small numbers seen in summer but no evidence of breeding.

127. Avocet, **Recurvirostra avosetta** - R, fc. Present both in winter and dry season, by the river,

lakes and marshes. Maximum of 300 on the Jamuna river in winter 1978-79, but such numbers were not seen in 1985-86. It appears to have become commoner since the 1960s.

128. Stone Curlew, **Burhinus oedicnemus** - RB, fc.

129. Great Stone Plover, **Esacus magnirostris** - R? s. Records of singles or pairs on river sandbanks, in late winter and summer. The flocks of "20 to more than 50" recorded by Usha Ganguli in the 1960s are gone. This species has clearly declined in the area.

130. Indian Courser, **Cursorius coromandelicus** - RB? s. Very local. Curious display by a pair seen in March 1986; on alarm, pair flew off, then suddenly changed style of flight to deep jerky wingbeats, like a displaying Shikra or a pigeon in 'delayed wingbeat mode'; both birds then swooped upwards and towards each other with partly closed wings, then down again; this sequence repeated thrice.

131. Oriental Pratincole, **Pratincola maldivarum** - M, fc. Present around river from May, then in increased numbers from June to August-September, when flocks of 50-75 occur, wheeling and calling at dusk. No evidence of breeding.

132. Little Pratincole, **Pratincola glareola** - R (RB?), c. Present all year, but most visible from February to June, when swarms of several hundred may occur at dusk at Sultanpur and on the river. In late May-early June 1986, several birds scattered over sandflats at Okhla performed 'broken-wing trick' on approach, but no nests could be found.

133. Herring Gull, **Larus argentatus** - W, o. Small numbers, maximum of 15, at Sultanpur Lake and the river. There may be two races, since some birds have the back distinctly darker grey than others.

134. Great Blackheaded Gull, **Larus ichthyaetus** - W, o. Most often noted in spring, both on the river and Sultanpur Lake.

135. Brownheaded Gull, **Larus brunnicephalus** - W, fc. Flocks of up to 100 in March-April, indicative of passage.

136. Blackheaded Gull, **Larus ridibundus** -

W, c. Often in larger numbers than Brownheaded; both species appear to have increased since the 1960s, and become more regular.

137. Whiskered Tern, **Chlidonias hybrida** - R, fc, and PM (spring), a. Present all year in fair numbers, e.g. up to 200 around Okhla and 100 at Sultanpur in December 1985. Massive spring passage evident from early March to mid-May, when most birds in breeding plumage. By mid-April, the river swarms with these terns with about 3000 birds in a 3 km stretch upstream in Okhla. After mid-May, numbers reduce sharply, with most birds thereafter on the river not in breeding dress. Several birds at marshes in North Delhi in July 1979 may indicate breeding, but no confirmation.

138. Whitewinged Black Tern, **Chlidonias leucoptera** - V. On spring passage. One in breeding plumage with Whiskered Terns at Okhla on 9 June 1986.

139. Gullbilled Tern, **Gelochelidon nilotica** - W, fc. Small numbers in winter; commoner March-June when flocks of 25-30 occur, usually in breeding plumage. There appears to have been some reduction in numbers since the 1960s.

140. River Tern, **Sterna aurantia** - RB, c. Just fledged juveniles in early June at Okhla. By early August, 50% of the River Terns present at Okhla appear to be juveniles of the year.

141. Blackbellied Tern, **Sterna acuticauda** - RB, c. Rather less common than River Tern.

142. Little Tern, **Sterna albifrons** - M (breeding?), o. Small numbers by the river in summer and monsoon. By July-August several juveniles are seen, and then the birds also wander to flooded marshes away from the river. Maximum of 25 at Okhla in August 1989. May have declined since the 1960s.

143. Indian Skimmer, **Rynchops albicollis** - PM? or V? r. This species has declined sharply. Compared to earlier records of breeding on the Jamuna sandbanks, and presence in some numbers during the summer, the bird was noted only twice over 4 years - a pair each in September 1978 and on 25 May 1985, on the river.

144. Indian Sandgrouse, **Pterocles exustus** -

RB, fc. Stony scrub in South Delhi and around Sultanpur Lake.

145. Painted Sandgrouse, **Pterocles indicus** - R (RB?), o. Small numbers throughout the year in scrubby and rocky areas near Mehrauli and the Jawaharlal Nehru University campus.

146. Common Green Pigeon, **Treron phoenicoptera** - RB, fc. More noticeable from February to May, the breeding season.

147. Blue Rock Pigeon, **Columba livia** - RB, a. Feral.

148. Ring Dove, **Streptopelia decaocto** - RB, a.

149. Red Turtle Dove, **Streptopelia tranquebarica** - RB, fc. Breeding freely in the green areas of the city March to May, thereafter spreading out in flocks of up to 50 in the surrounding countryside.

150. Spotted Dove, **Streptopelia chinensis** - V. 4 records of singles, January, February and April, in 4 years.

151. Little Brown Dove, **Streptopelia senegalensis** - RB, a.

152. Large Indian Parakeet, **Psittacula eupatria** - RB, fc. Has increased since the 1960s.

153. Roseringed Parakeet, **Psittacula krameri** - RB, a.

154. Blossomheaded Parakeet, **Psittacula cyanocephala** - RB, fc.

155. Pied Crested Cuckoo, **Clamator jacobinus** - M (breeding), fc. Recorded between June 1 and October 24.

156. Common Hawk-Cuckoo, **Cuculus varius** - RB, fc. Well distributed from early March onwards, but rarely noted in winter.

157. Common Cuckoo, **Cuculus canorus** - V. Straggler during spring passage. One record, 5 April 1979.

158. Drongo-Cuckoo, **Surniculus lugubris** - V. New record for Delhi. One was seen on 10 May 1986, perched on a kikar tree on the New Delhi Ridge in the evening, a day after a violent storm. Its presence attracted two noisy Black Drongos to the tree; disturbed, it flew off, followed by the Drongos. The Cuckoo's different style of flight, a continuous

lazy flapping, its shallow incomplete tailfork with some whitish on vent and different shape of beak were clues to identification.

159. Koel, **Eudynamys scolopacea** - RB, c.

160. Sirkeer Cuckoo, **Taccocua leschenaultii** - RB, o. Widely distributed though uncommon, on the Ridge, Mehrauli, Surajkund and Sultanpur.

161. Greater Coucal, **Centropus sinensis** - RB, c. Often in reedbeds.

162. Barn Owl, **Tyto alba** - RB, s. Most easily seen about the Red Fort at dusk.

163. Eagle-Owl, **Bubo bubo** - RB, o. Often around ruins and rocky areas of Mehrauli. Distraction displays in January near nest.

164. Spotted Owlet, **Athene brama** - RB, c.

165. Shorteared Owl, **Asio flammeus** - PM (spring), r. Two records, both near Okhla, on 17 March 1979 and 8 March 1986.

166. Indian Nightjar, **Caprimulgus asiaticus** - RB? o. Appears to have declined. Heard calling in open stony country in South Delhi. No records of gatherings of up to a dozen birds in September-October (indicative of migration?) as recorded previously.

167. Franklin's Nightjar, **Caprimulgus affinis** - RB? (or M, breeding?), o. A few birds recorded in March-April 1979 calling in flight over rocky ravines in the Jawaharlal Nehru University campus. Previously recorded in various months between May and September, in the Delhi area.

168. House Swift, **Apus affinis** - RB, c.

169. Palm Swift, **Cypsiurus parvus** - V. Singles noted at Okhla and over New Delhi on 17 March and 14 July 1979 respectively.

170. Pied Kingfisher, **Ceryle rudis** - RB, c.

171. Common Kingfisher, **Alcedo atthis** - RB (and W?), c.

172. Whitebreasted Kingfisher, **Halcyon smyrnensis** - RB, c.

173. Bluecheeked Bee-eater, **Merops superciliosus** - M (breeding), fc. Earliest record 24 May. Late-July to September, very large gatherings sometimes occur on overhead wires, etc. especially near marshes and the river, probably preparatory to migration.

174. Little Green Bee-eater, **Merops orientalis** - RB, c. Numbers increase in spring, when parties of up to 20 birds may be seen in March flying northwest in the mornings.
175. Indian Roller, **Coracias benghalensis** - RB, fc. A few birds appear to enter city limits in summer from surrounding areas to breed in city parks, etc.
176. Hoopoe, **Upupa epops** - RB, c.
177. Grey Hornbill, **Tockus birostris** - RB, fc. Flying young in late-March and April.
178. Green Barbet, **Megalaima zeylanica** - RB, c.
179. Coppersmith Barbet, **Megalaima haemacephala** - RB, c.
180. Wryneck, **Jynx torquilla** - W, o. Numbers increase in first half of March, evidence of passage.
181. Goldenbacked Woodpecker, **Dinopium benghalense** - RB, fc.
182. Yellowfronted Pied Woodpecker, **Picoides mahrattensis** - RB, o. In thorn scrub.
183. Redwinged Bushlark, **Mirafra erythroptera** - RB, c.
184. Ashycrowned Finchlark, **Eremopterix grisea** - RB, c.
185. Rufoustailed Finchlark, **Ammomanes phoenicurus** - RB? r. In very small numbers in rocky terrain at Tughlakabad, and further south near Sohna and Nuh (in cultivated country).
186. Short-toed Lark, **Calandrella cinerea** - W, c. Most frequent in neighbourhood of marshes as at Sultanpur.
187. Sand Lark, **Calandrella raytal** - RB, c. About the river.
188. Eastern Calandra Lark, **Melanocorypha bimaculata** - IW, r. About 20 seen with Short-toed Larks and Spanish Sparrows in open ground near the marshes near the Coronation Pillar in North Delhi on 10 February 1978; one seen with Short-toed Larks near Mehrauli on 4 January 1986.
189. Crested Lark, **Galerida cristata** - RB, c.
190. Little Skylark, **Alauda gulgula** - RB, fc.
191. Indian Sand Martin, **Riparia paludicola** - RB, c.
192. Dusky Crag Martin, **Hirundo concolor** - RB, fc.
193. Common Swallow, **Hirundo rustica** - W, c.
194. Wiretailed Swallow, **Hirundo smithii** - RB, c.
195. Cliff Swallow, **Hirundo fluvicola** - RB, fc.
196. Redrumped Swallow, **Hirundo daurica** - RB, fc.
197. Great Grey Shrike, **Lanius excubitor** - RB, c. In the surrounding countryside, cultivation and scrub.
198. Baybacked Shrike, **Lanius vittatus** - RB, c. In babool and prosopis groves, even in city parks.
199. Isabelline Shrike, **Lanius isabellinus** - W, fc. Noted in the uncultivated dessicating flats surrounding drying-up marshes in north and south Delhi and around the Sultanpur lakes, and fallow fields adjacent to the river. Not in cultivation or dry scrub country.
200. Rufousbacked Shrike, **Lanius schach** - RB, fc. In wooded areas and near water. Least numerous of the three resident shrikes.
201. Brown Shrike, **Lanius cristatus** - V. Delhi lies at the western edge of the usual wintering range of this species. One bird was present between 15 and 25 December 1985 at Okhla.
202. Golden Oriole, **Oriolus oriolus** - M (breeding), c. In city gardens and the larger groves in the countryside. Arrives by end-March.
203. Black Drongo, **Dicrurus macrocercus** - RB, c. In winter, most birds seem to leave the city for the surrounding countryside, returning to breed in city parks, etc. in March. Some migration is also evident; by end-March, when many pairs have established territory and are building, others, singly or in parties of up to 7, are seen flying northwest over Delhi at about 30 m height.
204. Grey Drongo, **Dicrurus leucophaeus** - V or PM (spring), r. One record; a bird on 31 March 1985 in a New Delhi garden.
205. Whitebellied Drongo, **Dicrurus merulinus** - V. Two records; singles on 26 October 1978 and 19 January 1986, both times in *Prosopis*

woodland in New Delhi zoo.

206. Greyheaded Myna, **Sturnus malabaricus** - V or PM (spring), r. Two records; singles on the same date, 7 March, in both 1979 and 1985 at Okhla and in a city garden respectively.

207. Brahminy Myna, **Sturnus pagodarum** - RB, c.

208. Rosy Pastor, **Sturnus roseus** - PM, s and W, r. In contrast to the large scale passage noted by Hutson and Ganguli in the 1940s-1960s, this species is now remarkably scarce. In autumn, small parties of about 10, mostly juveniles, are seen rarely; in spring, only a few small groups of 3 to 6 between 30 March and 20 April. Once in mid-winter, about 15 in a roost with Common Mynas in January 1978.

209. Starling, **Sturnus vulgaris** - W, fc. Locally common.

210. Pied Myna, **Sturnus contra** - RB, c.

211. Common Myna, **Acridotheres tristis** - RB, a.

212. Bank Myna, **Acridotheres ginginianus** - RB, c. Breeding freely in flood control bunds and dykes. Enormous roosts of 1000s in green areas of the city, such as the Central Vista in March and April.

213. Indian Treepie, **Dendrocitta vagabunda** - RB, c.

214. House Crow, **Corvus splendens** - RB, a.

215. Jungle Crow, **Corvus macrorhynchos** - RB?, s. Small numbers are present all year, in contrast to the 1960s, when it seems to have been far rarer.

216. Common Wood-Shrike, **Tephrodornis pondicerianus** - RB, c.

217. Large Cuckoo-Shrike, **Coracina novaehollandiae** - V. One record, one bird on 5 April 1979 on the Ridge, hotly chased by a Crow.

218. Longtailed Minivet, **Pericrocotus ethologus** - W, o.

219. Little Minivet, **Pericrocotus cinnamomeus** - RB, fc.

220. Marshall's Iora, **Aegithinia nigrolutea** - R, r. In the 1960s and earlier, this species was recorded as a resident in small numbers from several localities in the Delhi area. It is now extremely

scarce. Noted only on the New Delhi Ridge, where it was seen occasionally in 1978-79, but only once in the years 1985-86, on 1 June 1986.

221. Redwhiskered Bulbul, **Pycnonotus jocosus** - RB, c.

222. Whitecheeked Bulbul, **Pycnonotus leucogenys** - RB, fc.

223. Redvented Bulbul, **Pycnonotus cafer** - RB, a.

224. Yelloweyed Babbler, **Chrysomma sinense** - RB, fc.

225. Common Babbler, **Turdoides caudatus** - RB, c.

226. Striated Babbler, **Turdoides earlei** - RB, fc. In marshes and reedbeds; also noted in *Prosopis* scrub covering the sides of flood control embankments by the river.

227. Large Grey Babbler, **Turdoides malcolmi** - RB, fc.

228. Jungle Babbler, **Turdoides striatus** - RB, c.

229. Redbreasted Flycatcher, **Muscicapa parva** - W, fc. Few in mid-winter, but marked passage from mid-March to mid-April.

230. Verditer Flycatcher, **Muscicapa thalassina** - PM, r. A pair on 9 March 1986 at Surajkund, the only record.

231. Greyheaded Flycatcher, **Culicicapa ceylonensis** - W, o. Not uncommon in singles or twos and threes in better wooded corners.

232. Whitebrowed Fantail-Flycatcher, **Rhipidura aureola** - R, s. Appears to have sharply declined in numbers since the 1960s.

Previously considered a not uncommon resident. Now only very occasionally seen in babool woodland, usually singly, and appears shy and vagrant. Exceptional in city gardens or in *Prosopis* woodland on the Ridge. Its decline may well be linked to the rapid loss of former indigenous habitats around Delhi.

233. Fantail-Warbler, **Cisticola juncidis** - RB, c.

234. Franklin's Wren-Warbler, **Prinia hodgsonii** - RB, c. In taller scrubland, parks, woodland on the Ridge.

235. Rufousfronted Wren-Warbler, **Prinia buchanani** - RB, c. In low, dry thorn scrub.
236. Streaked Wren-Warbler, **Prinia gracilis** - RB, fc. In grass and tamarisk trees near the river, reedbeds in marshes.
237. Plain Wren-Warbler, **Prinia subflava** - RB, c. In cultivation, grass and bush areas, reedbeds.
238. Ashy Wren-Warbler, **Prinia socialis** - RB, c. In gardens, parks, taller cultivation such as sugarcane, etc.
239. Yellowbellied Wren-Warbler, **Prinia flaviventris** - RB, c. New species on the Delhi list. First recorded in March 1979 in the reedbeds by the river just above the weir at Okhla, and again in 1985-86 at the same place as well as in the extensive reedbeds at Madanpur, a few kilometres further south. In both localities it is common, and co-exists with the equally abundant Streaked, and the less common Plain Wren-Warbler. Evidently resident, seen in pairs and singing freely in March; mating observed in July. The presence of this species in Delhi, especially as a breeder, represents a considerable range extension.
240. Tailor Bird, **Orthotomus sutorius** - RB, c.
241. Striated Marsh Warbler, **Megalurus palustris** - R, fc. Another new species on the Delhi list. First recorded in November 1978 at the marshes near the Coronation Pillar in North Delhi, and found later through 1979 and in 1985-86 at the same place and at Madanpur south of Okhla. Recorded throughout the year, and song and display flights noted, so presumably breeds. The Delhi area is well within the range of the species, so its presence here is not unexpected.
242. Indian Great Reed Warbler, **Acrocephalus stentoreus** - M (breeding?) or RB? fc. Often common at suitable localities between March and August. Many noted singing in May and July at Madanpur in South Delhi.
243. Blyth's Reed Warbler, **Acrocephalus dumetorum** - PM, fc. More noticeable in spring, early-April to mid-May.
244. Paddyfield Warbler, **Acrocephalus agricola** - PM (spring), s. Small numbers, last week of March through April.
245. Booted Warbler, **Hippolais caligata** - PM (spring), s. Irregularly and in small numbers, from the last week of March to the second week of May, in gardens and reedbeds. Unlike previously, not recorded in autumn.
246. Orphean Warbler, **Sylvia hortensis** - W, r. Only two records, January 1978 and December 1985.
247. Lesser Whitethroat, **Sylvia curruca** - W, c.
248. Chiffchaff, **Phylloscopus collybita** - W, c.
249. Olivaceous Leaf-Warbler, **Phylloscopus griseolus** - W, o and PM, fc. Formerly considered only a passage migrant. Small numbers were present all winter in 1977-79 and 1985-86 in suitable habitat on the Ridge, at Surajkund and at Tughlakabad, with marked spring passage in March.
250. Yellowbrowed Leaf-Warbler, **Phylloscopus inornatus** - W, c.
251. Brook's Leaf-Warbler, **Phylloscopus subviridis** - PM (spring), s. Small numbers presumed on passage in the second half of March in *Prosopis* woodland on the New Delhi Ridge; birds are then singing freely, which assists in their identification from the common Yellowbrowed (Hume's) Leaf-Warblers. May also be present in winter.
252. Greenish Leaf-Warbler, **Phylloscopus trochiloides** - PM, o. Previously recorded as occurring only, though fairly commonly, on autumn passage, with very few in winter. Records during 1977-79 and 1985-86 are only of small numbers, but on both passages, September-early October in autumn, and mid-March to mid-April in spring, when singing freely.
253. Green Leaf-Warbler, **Phylloscopus nitidus** - V or PM (spring), r. One record of a well marked bird on 20 April 1979, on the New Delhi Ridge.
254. Large Crowned Leaf-Warbler, **Phylloscopus occipitalis** - PM, r. Two records, one on 20 September 1979 and two on 23 March 1986, on the New Delhi Ridge.

255. Common Rubythroat, **Erithacus calliope** - V or PM, r. Two records, a male on the Ridge on 31 October 1978 and another at Okhla on 24 March 1979.
256. Bluethroat, **Erithacus svecicus** - W, fc.
257. Magpie-Robin, **Copsychus saularis** - RB, o.
258. Black Redstart, **Phoenicurus ochruros** - W, fc.
259. Brown Rockchat, **Cercomela fusca** - RB, fc.
260. Collared Bushchat, **Saxicola torquata** - W, c. In surrounding cultivation.
261. Whitetailed Bushchat, **Saxicola leucura** - RB, fc. New species on the Delhi list. First noted in December 1978 at the marshes near the Coronation Pillar in North Delhi. Subsequently found to be common in 1979 and in 1985-86 in reedbeds and wet cultivation about Okhla and Madanpur in South Delhi, where it is resident and present all seasons. Males noted singing as early as late-January; song flights recorded in March, the males flying up 5 m then fluttering down with open tail, singing all the while. By last week of March, some pairs are building, a few already feeding just-fledged young.
262. Pied Bushchat, **Saxicola caprata** - RB, fc. Usually near water, river, canal banks, lakes or marshes.
263. Desert Wheatear, **Oenanthe deserti** - W, o. More frequent in March, by the river and in open country near Surajkund.
264. Indian Robin, **Saxicoloides fulicata** - RB, c.
265. Blue Rockthrush, **Monticola solitarius** - W, o.
266. Blackthroated Thrush, **Turdus ruficollis** - W, o. Present most winters, usually in small numbers.
267. Grey Tit, **Parus major** - V. One on 4 January 1986 with a mixed party of warblers, minivets and a Yellowfronted Pied Woodpecker in a South Delhi 'city forest'.
268. Firecapped Tit, **Cephalopyrus flammiceps** - PM (spring), r. A party of 5 in a shisham grove in a New Delhi nursery on 29 March 1986.
269. Chestnutbellied Nuthatch, **Sitta castanea** - R, r or V. This species was scarce even in the past and seems to have declined further. A group of three in a New Delhi garden in December 1978 and a single at Okhla in March 1979 are the only records.
270. Indian Tree Pipit, **Anthus hodgsoni** - W, fc.
271. Tree Pipit, **Anthus trivialis** - PM (spring), s. Considered by Usha Ganguli as a winter visitor, 'not too common' but more frequent than the Indian Tree Pipit. It now appears to be only a scarce passage migrant; very few records in the last week of March. Usually in heavier grassy cover than the Indian Tree Pipit.
272. Indian Pipit, **Anthus novaeseelandiae** - RB, c.
273. Tawny Pipit, **Anthus campestris** - W, o. In low open scrub and grazing areas about Tughlakabad and Mehrauli.
274. Vinaceousbreasted Pipit, **Anthus roseatus** - W, o. Frequent in some winters, scarce in others, in marshes and about canal banks and bunds near the river; entering into breeding plumage in March.
275. Brown Rock Pipit, **Anthus similis** - W and PM, s. Most often noted in spring, also in mid-winter. In low rocky scrub on the Ridge and elsewhere and on flood protection embankments by the river.
276. Yellow Wagtail, **Motacilla flava** - W, c. Abundant on spring passage.
277. Yellowheaded Wagtail, **Motacilla citreola** - W, c. *M. c. calcarata* is a spring passage migrant, noted between 15 March and 24 May.
278. Grey Wagtail, **Motacilla caspica** - W, s.
279. White Wagtail, **Motacilla alba** - W, c. Both *personata* and *dukhunensis* occur commonly, the latter rather more so. One *alboides* recorded in full breeding plumage at Surajkund on 9 March 1986.
280. Large Pied Wagtail, **Motacilla maderaspatensis** - RB, c.
281. Purple Sunbird, **Nectarinia asiatica** - RB, c.

282. White-eye, *Zosterops palpebrosa* - RB, c.

283. House Sparrow, *Passer domesticus* - RB, a.

284. Spanish Sparrow, *Passer hispaniolensis* - IW, s. About 30 with Short-toed Larks and Eastern Calandra Larks at marshes in North Delhi on 10 February 1978; about 20 with Short-toed Larks, Starlings, Red Turtle Doves and House Sparrows at Sultanpur on 28 December 1985, are the only records.

285. Yellowthroated Sparrow, *Petronia xanthocollis* - RB, fc. There seems to be a breeding influx into wooded areas of the city in summer.

286. Baya Weaver, *Ploceus philippinus* - RB, c.

287. Blackthroated Weaver, *Ploceus benghalensis* - RB, c. Appears to have increased since the 1960s when it was recorded as very uncommon. Large flocks are now seen in reedbeds and marshes, and by the river, and it breeds freely in these areas in the monsoon.

288. Striated Weaver, *Ploceus manyar* - RB, fc. In contrast to the position recorded in the 1960s, this species now appears less common than the preceding one. It also occupies a different ecological niche, preferring smaller channels and ponds with overhanging grass and vegetation; the Blackthroated prefers reedbeds or areas of tall grass standing on wet ground.

289. Red Munia, *Amandava amandava* - RB, fc. Appears to have increased around marshes and wet cultivation. In the non-breeding season, small parties also occur in dry short grass and scrub areas such as the Ridge and Mehrauli.

290. Whitethroated Munia, *Lonchura malabarica* - RB, c.

291. Spotted Munia, *Lonchura punctulata* - RB, s. Occasionally seen at Okhla. A family party of 2 adults and 3 juveniles once seen on the Ridge.

292. Blackheaded Munia, *Lonchura malacca* - RB? Escapes? About 20 at Madanpur on 6 July 1986. Previously recorded by P. Jackson breeding at this locality in September.

293. Common Rosefinch, *Carpodacus*

erythrinus - W, o. Sometimes common on the Ridge, particularly on passage in April.

294. Redheaded Bunting, *Emberiza bruniceps* - V or PM, r. Formerly (1960s) considered a fairly common spring migrant, it now seems very scarce; 3 on 4 February 1979 is the only record over five seasons.

295. Whitecapped Bunting, *Emberiza stewarti* - W, o and PM, fc. Small numbers present in suitable thorn scrub areas such as the Ridge all winter. Commoner and more widespread on passage from early-March to mid-April.

296. Greynecked Bunting, *Emberiza buchanani* - PM, r. One on 28 March 1979 in dry open scrub near Mehrauli, only record.

DISCUSSION

A comparison of the above with previous literature would appear to indicate a definite change in the populations of several species. 6 species were recorded for the first time in the Delhi area; 20 species appear to show an increase in their populations; and 27 species appear to have decreased. These are listed in Table A.

The total number of species recorded in the Delhi area so far is about 410. 296 were recorded during the above periods of observation. Of the remaining 114 species:

- 16 fall in the category of former/presumed breeders.
- 11 have been characterised in past literature as rare but probably regular winter-visitors or passage migrants.
- 17 have been characterised in past literature as irregular winter-visitors or passage migrants.
- 69 fall in the category of vagrants or inadvertent stragglers; these are not considered further in this paper.

The first three categories are listed in Table B.

A perusal of the two tables would indicate:

1. 13 species of birds of prey are noted as decreasing, and 2 raptor species, formerly recorded

TABLE A

New Record	Increasing	Decreasing
1. Spotted Crake	1. Large Cormorant	1. Blacknecked Stork
2. Caspian Plover	2. Indian Shag	2. Adjutant Stork
3. Drongo-Cuckoo	3. Purple Heron	3. White Ibis
4. Yellow-bellied Wren-Warbler	4. Chestnut Bittern	4. Crested Honey Buzzard
5. Striated Marsh Warbler	5. Openbill Stork	5. Brahminy Kite
6. White-tailed Bush-Chat	6. Barheaded Goose	6. White-eyed Buzzard
	7. Lesser Whistling Teal	7. Bonelli's Eagle
	8. Spotbill	8. Tawny Eagle
	9. Longlegged Buzzard	9. Lesser Spotted Eagle
	10. Imperial Eagle	10. Pallas' s Fishing Eagle
	11. Greater Spotted Eagle	11. King Vulture
	12. Brown Crake	12. Pale Harrier
	13. Bronzewinged Jacana	13. Short-toed Eagle
	14. Avocet	14. Osprey
	15. Brownheaded Gull	15. Laggar Falcon
	16. Blackheaded Gull	16. Redheaded Merlin
	17. Jungle Crow	17. Great Stone Plover
	18. Olivaceous Leaf-Warbler	18. Little Tern
	19. Blackthroated Weaver	19. Indian Skimmer
	20. Red Munia	20. Indian Nightjar
		21. Rosy Pastor
		22. Marshall's Iora
		23. White-browed Fantail Flycatcher
		24. Chestnutbellied Nuthatch
		25. Tree Pipit
		26. Striated Weaver
		27. Redheaded Bunting

as irregular visitors were not re-recorded. Significantly, 11 of the 13 decreasing species and one of the formerly irregular visitors are resident species. In contrast, most migrant raptors (winter visitors) have maintained their numbers, and three (Long-legged Buzzard, Imperial Eagle and Greater Spotted Eagle) actually appear to be commoner and more regular than previously recorded.

This is an ominous sign. Even relatively common raptors, such as Tawny Eagle, White-eyed Buzzard and Crested Honey Buzzard, have noticeably declined. If migrant raptors can maintain their numbers, it would appear that shortage of food or loss of habitat is not a major constraint (at least for most species); this points to disturbance in their

breeding cycles as the likely cause of the decrease of resident species in the Delhi area. This is as likely to be direct - physical disturbance, noise pollution, loss of traditional nesting sites - as indirect, effect of pesticides and other poisons, for example - or, likely, both. In the case of the two falcons (Laggar and Red-headed), which have adapted well to urban areas elsewhere, the latter is probably the likely cause. Much more detailed study would be required to establish the causes precisely.

2. Similar factors as for raptors are probably involved for the 3 owls, particularly the Dusky Eagle-owl, which were formerly categorised as not uncommon breeders, but were not re-recorded at all in the present study.

TABLE B

Formerly Presumed or Confirmed Breeder	Formerly Considered Regular but Rare in Winter or Passage	Formerly Considered Irregular Winterer or Passage Migrant
1. Little Bittern	1. Hen Harrier	1. Spotted-billed Pelican
2. Black Bittern	2. Common Quail	2. White Stork
3. Lesser Spotted Eagle	3. Sociable Plover	3. Glossy Ibis
4. Jungle Bush-Quail	4. Pintail Snipe	4. Greyheaded Fishing Eagle
5. Button-Quail	5. Jack Snipe	5. Cinerous Vulture
6. Yellowlegged Button-Quail	6. Imperial Sand-grouse	6. Common Tern
7. Blue-breasted Banded Rail	7. Rufous Turtle-Dove	7. Sykes' Nightjar
8. Great Indian Bustard	8. White-bellied Minivet	8. Kashmir Roller
9. Collared Scops-Owl	9. Isabelline Wheatear	9. Skylark
10. Dusky Eagle-Owl	10. Pied Wheatear	10. Collared Sand-Martin
11. Brown Fish-Owl	11. Water Pipit	11. White-browed Blue Flycatcher
12. Bluetailed Bee-eater		12. Moustached
13. Paradise Flycatcher		13. Plain Leaf-Warbler
14. Jungle Wren-Warbler		14. Tickell's Leaf-Warbler
15. Bristled Grass-Warbler		15. Orange-headed Ground-Thrush
16. Spotted Grey Creeper		16. Wall Creeper
		17. Crested Bunting

3. Water and marsh haunting species present a mixed picture. Some are doing relatively better than may be expected. Expansion of seepage marshes and waterlogging may be an explanation. 14 such species (2 cormorants, 2 herons/bitterns, 1 stork, 3 ducks, 1 crane, 1 jacana, 1 avocet, 2 gulls and 1 weaver) appear to have increased; further, the three new breeding records for Delhi (2 warblers and 1 bush-chat) are all of marsh-haunting species.

On the other hand, 6 wetland species (3 storks/ibis, Great Stone Plover, Little Tern and Indian Skimmer) have decreased; 3 former breeders (2 bitterns and 1 rail) were not re-recorded. Further, 5 wetland species which were formerly considered rare or irregular visitors (2 snipe, 1 pelican and 2 storks/ibis) were also not recorded.

The most significant declines are of the large

storks (Black-necked and Greater Adjutant in particular) and the sand-bank nesting birds (Stone Plover, Little Tern and, especially, Skimmer). The latter have evidently been seriously affected by increasing disturbance along the Jamuna sand-banks, both by people and their animals, including stray dogs; no doubt, other breeding terns, pratincoles and plovers have been similarly affected, though no major decline is noticeable yet.

4. The decline of some of the passerines is striking; especially so for Marshall's Iora, 2 flycatchers (White-browed Fantail and Paradise), Chestnut-bellied Nuthatch, White-bellied Minivet, Spotted Grey Creeper and wintering Wheatears - all insectivorous species. The falling populations of many of these had been noted as early as the 1960's, and attributed to loss of indigenous acacia country. This loss has enormously accelerated since, with

expanding urbanisation, and most 'green' areas have been taken over by *Prosopis*. A massive increase in the House Crow population and consequent destruction of eggs and young may also be a factor. In spite of this, the decline of the White-browed Fantail Flycatcher and Paradise Flycatcher, species which have adapted to modified habitats elsewhere, remains enigmatic.

5. Two passage migrants, Rosy Pastor and Redheaded Bunting, appear to have declined sharply in numbers. The former was regular and abundant on both passages over Delhi at least until the 1960s; the latter was described as fairly common in spring and rare in autumn. Now both are definitely unusual. There seems to be a change in the status of the Greenish Leaf Warbler too - formerly recorded only on autumn passage, it now appears regularly in spring. While changes in the status of the Redheaded Bunting and Greenish Leaf Warbler could possibly be ascribed to a reduction in grain cultivation in the immediate neighbourhood of the city and to increase

in planted tree cover within city limits respectively, the case of the Rosy Pastor is strange.

6. On the positive side, Delhi still remains a great birdwatching locality. Most waders and ducks have maintained their numbers, and their concentrations in winter can be impressive, as can those of raptors; the Jamuna river appears to be an important migratory pathway, especially in early summer, when several species, normally unusual or rare so far inland, may occur; and the continued presence of species such as Painted Sandgrouse, within city limits as it were, is remarkable. But green areas and the thorn scrub countryside continue to be encroached upon, the river is getting more and more polluted and the vastly increased traffic across the Okhla barrage and the inevitability of a new bridge being constructed across some of the best bird areas near Okhla to cater to the increasing urbanisation across the Jamuna, will all take their toll. It will be interesting to see how the birdlife fares.

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